

Reaching prevention professionals: the Mentor portal

Cost-benefit analysis of a drug misuse prevention portal

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Preface

“To cure is good, to prevent is better” is a saying that has been proven scientifically. To support effective prevention all over the world, the Mentor Foundation has started an Internet Portal on drug misuse prevention. This study provides a cost-effectiveness analysis of the Mentor Drug Misuse Prevention Portal www.mentorfoundation.org.

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Executive summary

RAND Europe has conducted a cost-effectiveness analysis of the Mentor portal on drug misuse prevention. The main question of this research is:

To what extent can the Mentor portal contribute to the benefits and the effectiveness of drug abuse prevention?"

Although a pure cost-benefit analysis is not possible, taking the costs of the portal as the fixed expenditures for implementing it, this can be compared to various measures of non-monetisable benefit and some monetisable effectiveness estimations.

The study starts with a review of the effectiveness of provision of information via the Internet in order to estimate the extent to which a portal can contribute to better prevention care. On the basis of this review, the effectiveness and cost-effectiveness of drug misuse prevention in general are discussed. We then summarise the generally accepted criteria for effective portals on the Internet and conclude that the Mentor portal has the potential to play an important role in disseminating information on the types of prevention that are effective and how they can be implemented, but that the planned translation of the portal into several languages is important in order to obtain the global reach that it aspires to. Furthermore, we found that prevention interventions that focus solely on information provision are ineffective, but that many other forms of prevention are indeed effective. The Mentor portal, by concentrating on information to professionals instead of directly to the targets of prevention campaigns can provide beneficial information dissemination in the form of the results of different programmes' experiences and summary guidelines for designing and implementing a cost-effective prevention programme.

We discuss and calculate what the effect of a portal on the costs of information provision may be, such as increased practitioner effectiveness and decreased communication costs. We then calculate the direct costs and possible benefits of the portal. As a starting point, we estimate the number of prevention practitioners that will be reached in three scenarios: low, medium and high growth in the number of prevention practitioners reached. The benefits in each of these cases is offset against the budget (costs) for the coming years. The spreadsheets used for these calculations are provided to the Mentor Foundation

so that it can in future years make direct calculations of its actual cost effectiveness.

The main result of the study is that, under the assumed growth rates, the benefits of the portal will soon outweigh the costs if medium or high growth in the number of practitioners reached happens, but that the balance will be less positive in case of low growth. In any of the scenarios, the societal and other indirect benefits of improved prevention practice in the short and long terms cannot be calculated. This implies that the Portal is very probably useful and effective, and mostly cost-effective.

1 Introduction

Drug abuse is a problem of increasing concern in the whole world. Using the motto “It is better to prevent than to heal”¹, organisations all over the world have developed interventions aimed at preventing people from engaging in (alcohol and) drug abuse. Three types of prevention exist: Primary prevention is aimed at educating people about the negative consequences of drug abuse in order to keep them from ever trying drugs. Secondary prevention aims at specific target groups at risk for drug abuse, and tertiary prevention aims to mitigate the negative effects of early drug abuse. This means that tertiary prevention focuses on people who have already started using or abusing drugs.

Given the different types of prevention, a large diversity of interventions is needed to reach its goals. Examples of interventions are: information provision campaigns, education in schools, counselling to adolescents or prostitutes and needle-exchange programmes. The effect of such programmes is hard to measure; especially when it concerns primary prevention, for it is hard to know who has NOT started using drugs or alcohol and whether this is a consequence of a prevention intervention. Such effects can never be measured on the short term, but longer-term trends in drug use can.

Prevention workers all over the world have gained experience with their programs, but opportunities to learn from each others’ experiences are scarce. The Mentor Foundation has taken on the challenge of providing an information source on prevention programs and research, and improving information exchange amongst prevention workers. For this reason, it has developed a website where prevention professionals can find information, get into contact with colleagues and post information themselves. With its website, Mentor aims to provide tools for educators of prevention workers, so as to improve the quality of prevention workers.

Mentor has asked RAND Europe to conduct a cost-benefit-analysis of its portal. As will be explained later in this report, a pure cost-benefit analysis is not possible,

¹ Or, as economists like to say: “It is cheaper to prevent than to treat”.

but the costs and the benefits can be studied. This has led us to phrase the main question of this study as follows:

1. *"To what extent can the Mentor Portal contribute to the benefits and the effectiveness of drug abuse prevention?"*

To answer this question, we examined what the costs of the portal are, as well as what the cost-effectiveness and other non-monetisable benefits of prevention are.

To operationalise the notion of benefits, we answered two underlying questions:

- a. *"To what extent is information provision via the internet effective?"*
- and
- b. *"How (cost-)effective is drug prevention?"*

We believe that our analysis provides sufficient information to the reader to decide whether the costs of the website, which will also be discussed in this report, weigh up against the benefits it could generate.

The evaluation effort taken in this study should be seen in the context of the scarcity of precedent cases. Very few economic evaluations of drug abuse prevention activities have been undertaken, the conceptual issues involved in the application of economic evaluation have been rarely addressed and there are only limited resources about the costs and benefits or effects of drug abuse prevention programs.²

The question cannot be simply how to maximise the return of each monetary unit in prevention (Hubbard and French 1991). First of all, even if treatment were to be found more cost-effective than prevention, no policy-maker would like to take the responsibility to let any drug user become a abuser, who can then be treated, just because it is more cost-effective. Many ethical and societal aspects are to be taken into account that cannot be readily quantified. Furthermore, prevention programmes work on an entirely different time scale than other programmes addressing drugs, with effect lags of years instead of months. Therefore, the numbers in this report should be treated with caution and need to be considered in the perspective of the above factors. Thus, this study *will not* provide one number as the answer to the main question. What this study *does* provide is an

² See Werthamer (1998) for a literature review on economic evaluation of drug prevention effectiveness.

analysis of the potential qualitative and to a limited extent quantifiable effects of the portal based on a literature review.

We describe a schematic model of the functioning of the portal, develop a simple model of the effects and perform model calculations for some processes. The involved uncertainties (parameter uncertainty, model uncertainty and model process uncertainty) are addressed in a sensitivity analysis of the model calculations.

The calculations are of a basic arithmetic nature in order to allow for the high degree of uncertainty involved and to provide a framework for later evaluation once the portal has been fully marketed and rolled-out.

The conclusions of this analysis can contribute to a decision process taking a few precautions into account, among which are that the portal has not yet been marketed and that some of the features, especially the interactive web services which distinguish a portal from a website are not yet launched but prepared. Both will have a significant effect on the utilisation and the benefits of the portal. Furthermore, the data about effectiveness of prevention interventions should be considered taking the following into account:

- The percentages showing an effect in a study will mostly be higher, because an experimental programme will be implemented with zeal and by the persons who innovated it; in day-to-day practice, the implementation will be sub-optimal.
- On the other hand, the full range of effects of prevention is hard to evaluate – often, only a limited number of quantifiable outcome measures is taken, so it is probable that the real effects are underestimated.
- A lot of societal benefits of prevention, which are not directly linked to individual drug misuse itself, cannot be measured in any study. Such effects, like the years of productivity and happiness lost due to addiction or the general public's feeling of safety on the street, cannot be measured, not only because they cannot readily be linked causally to a prevention programme, but also because it is hard to measure something that has not happened because it was prevented.

What this study provides is a structuring of the decision factors. It clarifies strategic goals and mechanisms in order to realise the full potential of the investment, and it provides an easy to use framework for a later evaluation of the

portal once the marketing activities have been implemented. The weighing between the arguments is left to the reader.

2 Methodology

2.1 Definitions

The two main research questions – the benefits and impacts of information provision via the internet and the cost-effectiveness of drug prevention - could be addressed in two different ways: Through a cost-benefit analysis and a cost-effectiveness analysis.

"Cost-Effectiveness analysis is a method designed to assess the comparative impacts of expenditures on different health interventions."³

It is therefore necessary to define the core concepts of "effectiveness". A very simple definition of effectiveness in health-related activities is that health services are considered to be effective to the extent that they achieve health improvements in real practice settings.

A cost-benefit analysis is a systematic cataloguing of impacts as benefits (pros) and costs (cons) valuing in monetary units (assigning weights), and then determining the net benefits of the proposed project or activity relative to the status quo (net benefits equal benefits minus costs).⁴ Cost-Effectiveness and Cost-Benefit-Analyses are used to determine if resources invested in a certain activity or program produce benefits exceeding their costs. Unfortunately, neither one is fully applicable in this case due to methodological reasons and lack of data.

While the outcomes in a cost-effectiveness analysis might not be necessarily expressed in monetary values but in measures such as moral hazard or safe communities, a cost-benefit analysis requires in general a monetisation of both costs and benefits. The effects of drug prevention are not easily quantifiable nor can they be monetised. The choice would therefore be rather an analysis of the impacts of a program rather than a cost-benefit analysis.

An analysis can be targeted towards a single decision-making process or a continuous process, e.g., resource allocations at a societal level. Applied to health related issues, a cost-effectiveness analysis requires a numerical estimate of the

³ Gold, Siegel et al. (1996) p. 27.

⁴ Boardman, Greenberg, Vining and Weimer (2001) p1f.

magnitude of the effects of an intervention on health outcomes (Gold et al. 1996). It is usually expressed in a cost-effectiveness ratio which is the difference in effectiveness between an intervention and the alternative.⁵ Gold et al. (1996) describe as one of the prerequisites of a cost-effectiveness analysis a complete and careful description of the cascade of events emanating from the decision to intervene (or to engage in prevention activities). The core concept of a cost-effectiveness analysis is the comparison between alternatives.

Our research has shown that there is at the moment no other portal widely used and known among practitioners which targets the same objectives as the Mentor Portal. Drug related portals such as the ones also assessed by the internal cost-benefit analysis Mentor Foundation has undertaken (<http://www.emcdda.org>, <http://www.drugscope.org.uk/Drugscope>, <http://www.atod.org>, <http://www.samhsa.gov/>, <http://www.nida.nih.gov/>) have either different target groups, focus on certain geographical regions or specific drug related issues or use another “business model” and aim at other levels of interaction and community building. Furthermore, even taking that into account, cost and outcome data on other portals than Mentor are not readily available.

A comparison between the portal and a “conventional” drug prevention programme holds from a perspective of a sponsor but not from a societal perspective. The base of such a comparison is very weak since evidence has been found that simple provision of information does not have an effect on the reduction of drug misuse (see §3). Nevertheless, we will pursue a general approach analysing the impact of the portal with regard to the present situation.

2.2 General approach

In order to learn more about the effectiveness of Internet-based information and of prevention interventions, we have conducted a literature review. In this review, both effectiveness and cost-effectiveness measures are included. The review was done using electronic searches in Medline and on prevention-related websites, as well as a general search on Internet effectiveness on the Internet itself. Furthermore, a description of Internet Portals and the Mentor Prevention Portal in particular is given. Based on the project description provided by Mentor

⁵ It is therefore very important for this analysis to clarify the perspective of analysing the portal.

Foundation we developed a schematic model of the functioning of the portal. This model served as a guideline when developing the impacts of the portal in a quantitative and qualitative way. Many of the impacts are analogues of commercial portals' impacts. An analogy can be drawn between a corporate portal used for internal communication and the impacts of a community-focused portal like the Mentor portal. Nevertheless, the scope of the Mentor portal being larger we took into consideration that it acts as a multiplier and evaluated the benefits in the light of this function, i.e. looking for social instead of private benefits wherever possible.

Taken together, this information provided the basis for studying the potential benefits of Mentor's portal, both in a qualitative (societal benefits) and in a quantitative (costs, number of visitors) manner. As part of this, a number of cost-effectiveness calculations were done. Because the Mentor portal has only recently come into being, it is likely that its effect-range will grow as the marketing efforts come into full swing and as the portal becomes better known. How this will affect the number of visitors, and thus the benefits of the portal, cannot be predicted. We therefore did a sensitivity analysis based on three scenarios of future development of the portal in order to assess their benefits. It is clear that, if even the worst scenario still includes a positive cost-benefit ratio, that the Mentor portal is certainly cost-effective, and that the level of uncertainty about its cost-effectiveness will rise as the outcomes of the scenarios approximate the costs.

The chosen perspective is a societal perspective. The question of opportunity cost will not be addressed because we assume that the market for the resource in question, the portal, is efficient and therefore the budgetary value accurately measures the project opportunity costs (Boardman, Greenberg, Vining and Weimer 2001).

3 Literature review

3.1 Effectiveness of the Internet in conveying information and influencing behaviour

For the purpose of this study, it would be interesting to know whether information provision via the Internet has a demonstrable effect on the behaviour of its readers, so that it would be plausible that the information provided by Mentor's portal will improve prevention programmes.

Although a lot of research has been done on which aspects make a website effective, how it could be evaluated and how its effectiveness may be enhanced, the impact on behaviour is hard to assess. Most effectiveness studies use the number of visits or the 'click-through' rate as an outcome measure. A large number of papers on the use of the internet in classroom situations can be found on http://www.alnresearch.org/JSP/papers_frame_1.jsp. It must be noted, however, that it is just as hard to assess the effect of information provision via telephone information centres, information leaflets or information campaigns.

Some research has been done, however, and we will summarise its results here. Hadidi and Sung (2000) compared face-to-face pedagogy to online teaching and found that online instruction can obtain at least as good learning results as face-to-face instruction. The authors have not found any evidence that a combination of the two types of instruction has any added value.

Rideout et al. (2001.) conducted a survey among American young people (15-24 years old) about visits to health-related websites. On the question of whether the information on the internet had affected their behaviour, 39% of the health seekers did change their behaviour. Among them, African Americans were more likely to report a change (52%) than Hispanics (42%) or whites (37%). 14% of the information seekers visited a doctor as a result of their search on the Internet. A much larger percentage (69%) discussed the information with a friend or with their parents. This shows that at least some people act on the information provided and that it might also have an indirect effect on the others they talk with.

3.2 Effectiveness of drug misuse prevention

As the Mentor Foundation focuses on prevention of drug misuse by the young, this overview of the literature will do so as well. For the portal to be effective, it should improve the effectiveness of prevention programmes and of prevention policy.

The first question that comes to mind then, is whether prevention is effective at all. Although the subject is disputed, the effectiveness and the cost-effectiveness of drug misuse prevention programmes has been evaluated to a large extent and a large number of programmes have been found to be effective. However, some programmes clearly are not. The portal should thus enhance the effectiveness of programmes that have proven effectiveness and it could contribute to a decrease in ineffective measures. In this section, we will describe how effective prevention can be and what is known about its cost-effectiveness. In the section following this, we will discuss how the Mentor Foundation's portal could enhance the effectiveness of prevention and what that would mean for cost-effectiveness.

3.2.1 Prevention programmes of proven effectiveness

For a start, prevention is better than doing nothing. In a meta-analysis on the effect of HIV-prevention interventions on sex behaviours of drug users, Semaan et al. (2002) found a strong and significant impact of preventive interventions on sexual risk reduction among drug users.

In a number of thorough meta-analyses, Tobler and colleagues studied the literature concerning adolescent drug use prevention and school-based prevention programmes. She found the following prevention programmes to be effective (Tobler, 1986, Tobler & Stratton, 1997):

- Interactive programmes reduce drug use significantly;
- Smaller programmes (i.e. with less than 500 students participating) were more effective. As group size increased, effectiveness decreased. This is not surprising, as smaller groups allow more interaction;
- Clinician- and peer-leader-led groups are significantly more effective than teacher-led groups, regardless of the size of the programme.
- System-wide programmes, also known as collaborative prevention because of the collaboration between schools, community, media and

families, are much more effective than life skills programmes or social influence programmes.

Another study (NIDA, 1999) found that prevention programmes that help strengthen personal attitudes against drug use and that include general life skills training and training in skills to resist drugs when offered were effective. Furthermore, programmes should have a long-term focus with repeat (or so-called 'booster') sessions to reinforce prevention efforts and assist young people in transition periods. Consistent with Tobler, the study found that family-focused prevention efforts have a greater impact than programmes that focus on parents only or on children only, and that the effect is even greater when different interventions are combined: community programmes along with media campaigns and policy changes and school and family interventions. Similarly, Evans states that a pilot study which combined fear arousal with training in specific skills to resist peer pressure was effective (2002).

Social influences models and the cognitive-behavioural model, which includes problem solving skills, decision making, and self-control methods, form the basis of preventive programmes that are effective in reducing drug consumption (Evans, 2002, Botvin, 2002). Most of the studies in this area focuses on smoking prevention and found it to be very effective, at least in preventing and reducing smoking behaviour on the short and medium term (30-50% up to 3 years after the intervention), but the long-term effects are unknown. The effectiveness on drug consumption has been less well studied, but the studies that were done found effect is similar to those for smoking prevention. However, the optimal implementation of the interventions in terms of timing, length of the programme, structure, type of provider and timing of booster intervention has not been established yet (Botvin, 2002: p.66-67).

More information exists about integrated social influence and competence enhancement approaches. Both small and large studies have shown relatively large behavioural effects: 40 to 80% reductions in drug use. Even on long-term follow-up, the reductions in smoking, alcohol and marijuana use were large: from 44% in drug use to 66% in polydrug use (Botvin 2002: p. 71). The authors suggest that tailoring the intervention to target groups may further enhance its effectiveness.

Caulkins et al. (1999) have taken a slightly different approach: they have studied to what extent prevention may reduce the volume of cocaine consumption and found that prevention is far more effective than any other enforcement strategy can be for the same amount of money. Treatment, however, is more cost-effective in reducing cocaine use, but its societal costs are higher.

The effect of an intervention may be enhanced if it focuses on a target group. The higher the risk of a group, the more effect a preventive intervention may have (Hosman, 1996, p.19, Catalano, 2002, p.103).

For persons who are already heavily addicted, the only cost-effective measure is treatment. Prevention, although marginally useful to reduce harms, is much less cost-effective than treatment is (Caulkins, 1999).

3.2.2 Indirect effects

Indirect effects are by their nature hard to measure, but Caulkins (1999) provides an overview of the evidence that does exist. A number of substances, such as alcohol, cigarettes and marijuana are considered 'gateway' drugs. It is believed that people who misuse these drugs start using other drugs more frequently than people who don't. A delay in starting to use such gateway drugs may also delay initiation of other, more harmful drugs (Caulkins, 1999). A prevention programme does not only affect the people involved in it directly, it may also affect persons not participating in it. Assuming that drug users could influence other people to start using as well, the delay of one person starting to use may well delay or permanently prevent initiation by other persons (Caulkins, 1999).

3.2.3 Prevention programmes of proven *ineffectiveness*

Individual psychosocial prevention strategies have never been proven to be effective (Benard, 2001, Feldman, 1983, Kreft & Brown, 1998). Furthermore, programmes that only focus on enhancing knowledge, affective relations or programmes that use a combination of knowledge and affective relations enhancement, are ineffective (Tobler, 1986, Evans, 2002, Botvin, 2002).

Information provision has been proven ineffective in more studies, and Calafat (2000) even states: "If drug-prevention in schools 30 years ago demonstrated

the serious limitation of information provision as a method, even when aimed at a fairly receptive population which pupils are by definition, how can current approaches based almost exclusively on providing information – and to young people who have little interest in drug prevention and in some cases are deeply involved in drug misuse – be expected to succeed?” The same argument can be found in Evans (2002) and Botvin (2002). The latter summarises a number of articles that have found that “...prevention approaches that rely exclusively or primarily on the information dissemination model do not prevent, reduce, or deter drug use” (p.62).

A well known method of preventing people from starting to use drugs is to scare them away from it. Fear arousal alone is not enough, it was found. Most fear arousal efforts are done through information provision, so their limited effect is not surprising (Evans, 2002).

Benard and Marshall (2001) also state that most prevention programmes currently in practice are of proven ineffectiveness. They conclude that, apart from more research on what is not known yet, the current knowledge needs to be disseminated to policy-makers and practitioners so that prevention programmes can be adapted and ineffective programmes put to a stop.

3.2.4 Cost-effectiveness studies

Most assessments in health care utilise cost-effectiveness methods rather than cost-benefit studies, because a monetisation of benefits in health care is hard to reach and does not cover the full range of possible benefits a programme may have. Cost-effectiveness analyses tend to better capture the full scope of clinical and societal benefits (Botvin 2002).

Clearly, a programme that is not effective at all, cannot be cost-effective.

Preventive programmes that have been found to be effective are also cost-effective: for every dollar spent on prevention, four to five dollars are saved on treatment and counselling costs (NIDA, 1999, Pentz, 2002). Catalano (2002) found that comprehensive drug misuse prevention programmes are highly cost-beneficial and cost-effective, even though the costs for such large and complex

programmes are much greater than those for short-lived single component interventions.

On the other hand, prevention and early intervention effects and healthcare cost savings resulting from them often do not occur for several years, which makes it both hard to measure the effect and to attribute possible effects to the programme. It certainly makes it harder to calculate the cost-effectiveness

3.3 Conclusion

This chapter has given an insight into what is known and not known about the effectiveness and cost-effectiveness of different types of prevention interventions. It is clear that many programmes are effective, but that some of the programmes that are still very common have been proven to be ineffective. The Mentor Portal can play an important role in two ways:

- It could disseminate existing knowledge in order to help improve prevention programmes and erase the ineffective ones;
- With its option for practitioners to add their own project, it may serve as a central place to gather information about interventions that have not been studied yet. Such knowledge is perhaps less trustworthy than knowledge resulting from experimental research, but it provides a first insight into what seems to work and what not, what is being tried and what should not be tried anymore.

As shown from the document "Recommendation for Best Practice Project Development", the Portal has already incorporated the main knowledge from literature and translated this into clear guidelines.

4 Portals as an information medium

4.1 Forms of portals and their goals

There is no one set definition of a Web portal. Many companies involved in e-commerce provide different definitions according to their marketing strategy. Nevertheless, portals are defined by a few key characteristics. They are sites on the internet that serve as "search engines or robotic Web crawlers" that categorise information into directories ordering the large amount of data provided on the WWW. A portal assists a user searching for a particular item through the endless sources of information. The most popular portals started as search engines, but they have extended their offerings to include e-mail, chat functions and discussion fora, instant messaging, and even personalised service.

A common approach to evaluate portals or websites in general is the number of visitors.⁶ Among the websites with the most visitors are portals like MSN (rank number 1 with 3,7 million. Visitors), Microsoft, Wanadoo and Tiscali (ranking number 10 with 1,03 million Visitors).⁷

Table 4-1

Average Web Usage in the US at work 2002

Number of Sessions per Week	7
Number of Unique Sites Visited	20
Time Spent per Week	3h 40
Time Spent During Surfing Session	0: 32h
Duration of a Page viewed	00: 53
Active Internet Universe	81,330,000
Current Internet Universe Estimate	167,000,000

Source: Netratings 2002

⁶ The use of web statistics requires a more thorough analysis of the development of the statistics and given results than it is possible to make in this study, since there is no generally acknowledged methodology and therefore the statistics are often misleading.

⁷ All figures are for January 2002 and state unique visitors. (Nielsen 2002)

An ideal example of a web portal targeted towards the general public is Yahoo!. Yahoo! is a search engine that has more than 35 million registered users and hosts over 2,200 advertisers. The strategy of general interest portals is to capture the internet's biggest audience, the so-called "traffic." Nevertheless, an audience is not predictable, therefore the traffic of a website cannot be guaranteed. One of the main reasons for this problem is that general web surfers are not loyal to any one search engine. Web users utilise different search engines for different tasks. The majority of the major web portals service the same audience.

Going from general portals to corporate portals the goal of traffic still remains important but the user of the portal acquires another position in the overall information flow. There are two primary goals for the corporate implementation of a portal in general: One is return on investment through real savings related to process and technology costs. (Deloitte & Touche 2001) state that those savings can be as high as 10-20% reduction of costs when aggregating.

The other one is delivering information in order to enable increased search and retrieval efficiency and decreased access speed. Observations from commercial portal implementations have shown that a portal is first introduced as a core infrastructure for delivering electronic resources in a cost-effective way. It leads to increased savings in paper production and shipping costs related to reduced need for printed report and document generation distribution and mailing of client account updates. A second aim is to serve as a platform for delivering different services to different audiences which may increase revenues. There are a number of frequently cited tangible benefits which are claimed by vendors of portal software or consultancies. Comprehensive overviews are given by companies such as PeopleSoft (PeopleSoft 2002) or Plumtree Software (Plumtree Software Inc. 2001). Among the commonly stated so-called "hard-savings" are time savings in the application deployment, web deployment savings, training savings, streamlined administrative processes, personal productivity savings, and miscellaneous organisational resource savings - such as reducing printing and distribution, help desk support, and network and file storage.

Our research has found no evidence of analyses of drug-related websites or portals nor a portal aiming at the same goals as the Mentor portal. There are however a number of non-profit portals in the areas of health and environment whose impacts have been qualitatively assessed (Accenture, Markle Foundation,

UNDP, 2001). One successful example in the environmental area is SIDSNet, a medium of communication for 43 Small Island Developing States (SIDS) on common issues such as biodiversity, climate change, coastal and marine management, energy sources and trade. It is promoting the sharing of SIDS experiences and the development of the global SIDS agenda. The website receives an average of 300,000 hits per month from over 100 countries including donors and SIDS. The site contributes - according to an assessment by Accenture, Markle Foundation and UNDP - to an increasing level of awareness and understanding of the link between the environment and human development among SIDS decision makers. (Accenture, Markle Foundation, UNDP 2001).

4.2 Categories of portal functionality

Portal functionality can be categorized into four different areas: The portal infrastructure, portal operations, portal features and the portal presentation. Each of these areas has an impact on the costs as well as on the benefits of a portal. An in-depth analysis of a portal would have to develop a complete picture of the portal functionality. We will give only some indications in which way the more technical aspects will have an impact and concentrate on the features of the Mentor Portal.

Portal infrastructure describes issues such as systems integration, internationalisation, platform components, scalability, system security and the standards used (programming languages, protocols and technologies). A portal needs a solid infrastructure to operate effectively. It must be secure and scalable.

Portal operations deals with the administration of portal users, the community and the tools and utilities which create portal functionality. Portal administration plays an important role when it comes to limiting the maintenance costs. Furthermore, a portal that has a design and infrastructure that is easily upgraded, reduces costs over time.

Portal features consist of collaboration tools (messaging, discussion and general group development), content management, document management, personalisation and search functions. The features of a portal and how they are used are essential to the value of a portal. So for example the means of collaboration determine the communication, the support needs and the speed of

work executed with help of the portal. Personalisation can make the content more relevant and useful, increasing portal use and user productivity. We will later see that personalisation is not necessarily meant on an individual level but can also mean a regional user differentiation.

Portal presentation includes customisation (user's ability to change the layout and content of the portal), the user interface, the help functions available and e.g. alternative access modes such as wireless access via phones or wireless-enabled PDA's. The latter can be relevant in the case of a geographically extended working area.

Necessary conditions of effectiveness of the portal are its accessibility and its usability. Accessibility means smooth transformation on one hand: Information and services should be accessible despite work constraints or technological barriers

On the other hand it means understandable and navigable content: Content should be presented in a clear and simple manner, and should provide understandable mechanisms to navigate within and between pages. An accessible website:

- can be perceived
- can be navigated
- can be utilised (with keyboard or devices other than mice)
- can be easily understood (even in attention-poor situations)

While accessibility is aimed at making the website open to a wider user population, usability is aimed at making the target population of the website happier, more efficient, more effective. Website usability is determined by user satisfaction, ease of learning, user's ability to remember its organization and functionalities, user effectiveness, efficiency and likelihood of errors while performing the tasks the site has been designed for. Both aspects including the performance of automated tests of the technical functionality of the website would be part of an in-depth analysis of the portal.

4.3 Description of the Mentor portal

Mentor Foundation stated its goals for the portal as follows:

- To encourage more people to become active in drug abuse prevention by demonstrating what can be achieved.
- To raise awareness and stimulate intelligent debate about the nature of the issues in drug misuse prevention.
- To improve the quality of work, training and policy currently in place.
- To increase the amount of funding invested in drug misuse prevention.

These goals can be found in the elements of the website.

The portal consists at the moment of the following elements:

- Content management system
- Modular database for collecting, archiving and disseminating information
- Collaboration features such as rating functions, user comments to the database entries.

We learned from Mentor Foundation that more interactive features are planned and ready to be launched. One of them is a discussion forum which will cover “hot topics” in the community. A question will be raised e.g. by making a provocative statement. Mentor Foundation is applying an evolutionary approach when it comes to adding on more interactive features. E-learning modules are planned together with two large international partners. These modules will target very specific groups such as sports trainers and parents. Mentor follows here a strategy of customisation rather than a widespread approach.

In order to achieve these goals, the portal:

- Provides research documents, comparative studies and articles as well as practical information and debate in the field of prevention that allow users to compare and learn about different standards, policies and activities around the world.
- Provides professionals and policymakers with access to training opportunities, educational material and funding resources and guidelines to support their daily work.
- Provides a database with global data

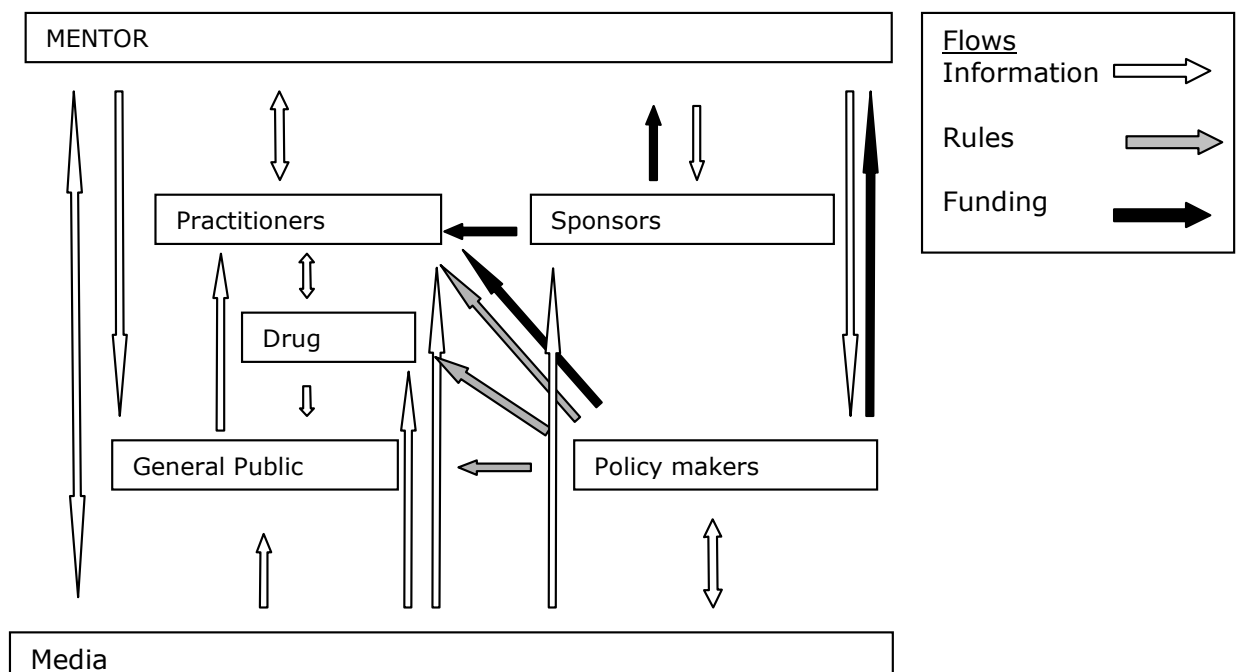
- Provides dedicated editorial briefings and special press reports to raise awareness in the media and help increase the quality of press coverage on drug misuse prevention issues.

The portal offers information on the latest scientific evidence, a large array of information on prevention projects underway, to which practitioners may add their own, information for the general public on the usefulness of prevention and best practices that form the basis for guidelines on developing an effective and economic prevention programme. The Portal also refers to documents on prevention from other organisations, such as NIDA and the Pompidou Group.

Figure 4-1 depicts the setting and the target groups of the portal in a schematic way. It serves as a framework to identify information flows and visualises the impacts and directions of impacts.

There are a number of target groups we will highlight according to the goals of the Mentor portal: policy makers, practitioners, media and interested public.

Figure 4-1



4.4 Conclusion

Although this study is not a quality assessment of the Mentor portal, it is clear that cost-effectiveness cannot come without effectiveness. We will therefore comment shortly on the effect Mentor may have. In Chapter Three, we already discussed the role the Mentor portal could play in enhancing practitioner and prevention effectiveness. This chapter has focused more on the technical effectiveness of a website. Using the criteria set in section 4.2, we can say that the portal can be perceived, navigated⁸ and utilised. The extent to which it can be understood could be subject to discussion. The language used is clear, at least for English speakers. Since the portal aims to reach prevention workers all over the world, its plan to translate the portal into several languages once it is completed can be considered crucial to its outreach.

The portal provides guidelines for setting up prevention interventions and for improving prevention practice and can thus contribute directly to the cost-effectiveness of prevention practice. Since practitioners all over the world have access to relevant scientific evidence and at the same time can learn about their colleague's work, this can promote the efficiency and effectiveness of their prevention programmes.

As we showed in Chapter Three, simple information provision to the general public will not have an effect on drug use in society. Thus, the flow of information from Mentor to the general public is not likely to be cost-effective. If the Portal focuses on the interested public, however, and aims to convince them to participate in prevention interventions, then one can speak of a target group and this approach is likely to have more success.

⁸ A short test of navigation in several Browsers has shown that the Portal can be navigated better in some browsers than in others.

5 Qualitative and quantitative analysis of the portal

5.1 Costs

Major societal costs of drug misuse and prevention are not quantifiable. An example can be the fear of being victimised in robbery or other drug related crimes and the reduction through prevention programs in a community (Werthamer 1998). We take the budgetary costs for the portal as given and will not differentiate and analyse them further.

So far, the expenses made for the portal add up to 874000 CHF up to the moment of the launch of the portal. Mentor Foundation has set the following budget (in CHF) for the first three years of existence of the portal, based on expected costs. Table 5-1:

	Year 1			Year 2			Year 3		
	H2 2002	H1 2003	Total	H2 2003	H1 2004	Total	H2 2004	H1 2005	Total
Staff	240,000	255,000	495,000	255,000	270,000	525,000	270,000	285,000	555,000
Portal Manager	52,000	55,000	107,000	55,000	57,500	112,500	57,500	60,000	117,500
Development Officer	44,000	47,500	91,500	47,500	50,000	97,500	50,000	52,500	102,500
Information Officer	44,000	47,500	91,500	47,500	50,000	97,500	50,000	52,500	102,500
Editor/Content Manager	40,000	42,500	82,500	42,500	45,000	87,500	45,000	47,500	92,500
Research/Data Entry	24,000	25,000	49,000	25,000	27,500	52,500	27,500	30,000	57,500
Technical Expert (50%)	36,000	37,500	73,500	37,500	40,000	77,500	40,000	42,500	82,500
Infrastructure	79,000	57,500	136,500	57,500	60,000	117,500	60,000	62,500	122,500
Hardware	9,000	7,500	16,500	7,500	10,000	17,500	10,000	7,500	17,500
Software	20,000	10,000	30,000	10,000	5,000	15,000	5,000	5,000	10,000
Hosting	10,000	10,000	20,000	10,000	12,500	22,500	12,500	15,000	27,500
System Development	40,000	30,000	70,000	30,000	32,500	62,500	32,500	35,000	67,500
Services	230,000	175,000	405,000	175,000	185,000	360,000	185,000	195,000	380,000
Translation	65,000	100,000	165,000	100,000	100,000	200,000	100,000	100,000	200,000
Portal Development	150,000	75,000	225,000	75,000	85,000	160,000	85,000	95,000	180,000
Internationalisation	15,000	0	15,000	0	0	0	0	0	0
Other	64,000	66,500	130,500	66,500	69,000	135,500	69,000	69,000	138,000
Travel	44,000	46,500	90,500	46,500	49,000	95,500	49,000	49,000	98,000
Various	20,000	20,000	40,000	20,000	20,000	40,000	20,000	20,000	40,000
Total (CHF)	613,000	554,000	1,167,000	554,000	584,000	1,138,000	584,000	611,500	1,195,500

5.2 Outcomes

The Drug Policy Research Center study (Caulkins 1999) researched whether drug prevention investments at least yielded their costs in social benefits. The findings were that from use reduction through prevention activities, social benefits for a dollar spent ranged between 64 cents and about \$5.60 with a mid-range preferred estimate at approximately \$2.40. The social benefits are reductions of social costs in terms of health, crime and other costs. There is however no direct applicability of this ratio on the costs saved by the portal without making the assumption that the portal functions in the same way a prevention program would.

The benefits of the portal may be tangible but difficult to measure, particularly if those benefits are improvements in productivity or knowledge rather than the avoidance of costs. Outcome is a measure of the effects attributable to an activity over a fixed period. This requires time, at least the possibility of observation and a distinction of the portal's impact from other factor introduced during that time. Furthermore, the measurement of the impacts of a portal is complex because the technology delivers different benefits to different audiences, which could even work in the same prevention program. We will therefore draw largely on the experience of corporate information portals when it comes to potential benefits since there is not yet any evidence in the non-profit area.

And as a third, Mentor Foundation is applying an evolutionary approach to the features of the portal, selecting applications to be added on carefully and testing their usage over a certain time before addressing another functionality. This modular approach lowers the risk of investment in new technological features, it makes it impossible on the other hand to define an overall impact.

5.2.1 Impacts of the Mentor portal

We have developed a number of potential positive impacts on social benefits resulting from the portal. When quantifying and monetising them we will not add the resulting effects up since there might be dependencies among the effects. We clearly highlight one impact which is the information research. Information research has been ranked by the respondents of the survey (Mentor Foundation

2002) with a 3.5 point rank right after the communication with colleagues (4 out of 5) as one of the most important professional activities.

Potential portal benefits are the following:

- Lower network, storage costs
- Lower communication costs
- Lower training costs
- Improve prevention information service
- Increase productivity in research
- Increase productivity in education, fundraising and project coordination
- Increase of awareness and stimulate debate about drug misuse prevention
- Increase of fundraising
- Increase of number of prevention programs worldwide
- Increase of networking potential and effectiveness of prevention programs worldwide

These effects will be discussed in more detail in the following paragraphs.

General assumption: There are 50,000 prevention projects worldwide. The Mentor Portal is reaching and building a prevention community with 4% of them. It has therefore a potential global reach of 2000 programs. Each project is assumed to be staffed by one practitioner.

- **Lower network, storage costs for the targeted projects**

The Portal has much like commercial portals an impact on the costs of sending, receiving and storing data. Using e-mail as a document distribution and management system is commonly practiced. E-mails with large attachments to a large audience cause network and storage costs. When users do not dispose of an organized framework to access information easily they are reluctant to delete information. Because the portal offers storage capacity, practitioners will be able to download information at any time, reducing the need for own storage capacity. Plumtree portal software performed a survey inquiring into the cost of digital data storage and traffic. From this survey can be derived that:

- Companies on average will distribute 50 large files via e-mail weekly
- The average size of these e-mails is 3 Mb
- The average number of recipients of these e-mail messages is 200
- The cost per Mb storage and trafficking is 0,08 CHF
- An e-mail reduction factor of 75% can be achieved by using a portal

The survey was aimed at private companies and the results therefore need some nuancing to be able to be used for a non-profit portal such as the MENTOR portal. Adjusting the survey's findings results in the following data:

- Practitioners on average will distribute 200 (10% of the 2000 practitioners send a multi-megabyte file via e-mail each week to a distribution list) large files via e-mail weekly.
- The average number of recipients of these e-mail messages is 50, since the number of practitioners is limited compared to the network companies maintain.
- An e-mail reduction factor of 25% can be achieved by using the MENTOR portal since there will still be large quantities of data be trafficked through the internet.

These assumptions and survey's results result in the following expenditure reduction: 200 mailings of 3 Mb to 50 recipients, with a cost of 0,08 CHF per Mb being reduced by 25%. The total reduction therefore comes down to approximately 30.000 CHF per year.

- **Lower communication costs**

The argument for lower communication costs is not clear-cut: One might claim that the printing and distribution savings for Mentor as well as the community in general will be considerable and that the internet reduces the need for direct communication via phone etc. Research has shown that most organisations who have some information to offer practice multi channelling, i.e. they diffuse their content via phone, publications, TV and internet. One medium enhances the use of the other. Practically: the phone number on the website generates more phone calls. We will therefore draw a distinction between the savings in printing and distributions and other communication costs. Mentor Foundation uses with the portal also a different tool for its own efforts. Instead of sending out material for fundraising and informing the interested public the information can be spread cost-effectively via internet.

One example is the development of the UNDCP-Report "Lessons learned in drug abuse prevention", a global review carried out by Mentor Foundation. The 120-page report was printed and distributed in 2000 copies for an amount of 40,000 Euro. The same report is available as well via portal and available for a higher number of portal users for free. Another impact related to this is that the report

reaches via the portal an audience which would otherwise not have had knowledge of the report. Mentor Foundation might have the possibility to cut printing and distribution costs as well for their own organization. The actual social benefits will depend on the number of publications on the portal and the number of downloads as well as the downloading user.

As for the other communications costs practitioners have expressed a strong need for communication with colleagues. Communication with colleagues is mostly undertaken via e-mail, via telephone and to a lesser degree personally. The use of chat and discussion boards is not yet widespread, it ranked with 0.69 out of 5 as last communication means in the market survey undertaken by Mentor. Therefore the use of discussion boards in the community is an issue which has to be addressed in the marketing strategy of the portal.

- **Lower training costs for practitioners**

Specific training impacts or activities are not yet identifiable. The portal possesses the potential to become not only an information tool to find training in the field of prevention but also to deliver training modules. Distance learning could be a particularly successful model where affordability and geography have been real barriers to access. The provision of online learning modules is of course not cost-free. But with marginal cost of near to zero it is one of the most effective applications of a portal in general. A careful assessment has to be undertaken to see if this is feasible as well for the prevention field.

- **Improve prevention information service**

The portal allows a "self-service" of interested public, media, practitioners and sponsor when searching for prevention-related information. They can administer their own benefits. The largest benefits can be expected on the side of practitioners, who may turn their prevention intervention into a more cost-effective one. The Mentor website provides clear information on what interventions are likely to be effective and which might not be as successful as one might wish. The literature review has shown that prevention programmes that focus on information provision alone are not effective and thus not cost-effective. The effects of information at Mentor's portal on the general public will probably be small, but it cannot be said to be ineffective. The portal aims at the

interested public – perhaps parents or teachers can be reached who then use the information as part of a focused preventive effort. The media may use the portal to obtain information on both the theory and practice of drug misuse prevention.

- **Increase productivity in research of the practitioners**

A survey (Mentor Foundation, 2001) amongst practitioners learned that in the current situation, practitioners spend 29% of their time on research. As illustrated in table 5-2, 22% of this time is spent looking on the internet for information. It is pragmatic and reasonable to assume that if the portal saves the practitioner's time, it will save money. It could also mean that saving practitioner time leads to more field work or fundraising. On the other hand, the gain in knowledge gathering through the portal could be a purely qualitative one.

Looking at the information needs stated by the practitioners in the survey Mentor conducted, the respondents found it difficult to judge the value of information. Responding to the information needs clearly stated by the surveyed practitioners the most important problems for information retrieval were that information is not short and precise (2.6 on a 5 point scale), information is difficult to locate and information cannot be found. All except the last arguments refer to the time aspect.

Information source	Percentage of time spent
Internet	22%
Personal contact	21%
Books and periodicals	19%
Local and academic libraries	13%
Drug organisations	13%
Drug related information centres	12%
Total	100%

Table 5-2, time spending by practitioners. Source: Mentor, 2001.

The model calculation is based on the quantitative aspect of timesaving through the portal. The Mentor portal will result in an increase in practitioners' research productivity since the portal offers a high information density, which satisfies a large number of practitioners' research requests. They therefore will not have to do a time consuming internet search. It is assumed that practitioners using the

portal would be able to reduce their internet research time by 20 minutes a week which comes down to a 13% (20 minutes per 22% of 29% of 40 hours) reduction in internet time research or a 0.8% (20 minutes per 40 hours) reduction in time.

Determining the hourly costs of a practitioner is based on the following assumptions:

The net income for Western practitioners varies between 37.500 CHF – 90.000 CHF.

Western practitioners make up for 50% of the global practitioners, but 80% of practitioners' costs are allocated to Western practitioners. The cost of practitioners to the programmes is, due to taxes, social security and other expenses, double the actual practitioners' income. (Mentor, personal communications)

This results in the following table:

	Western	Rest of the world
High boundary	180.000	40.000
Low boundary	75.000	20.000

Table 5-3, Yearly costs of practitioners in CHF

From table 5-2 and the time-savings mentioned above, it can be deduced that time savings will amount to approximately 650 CHF on average per practitioner (see Annex 1 for background calculations). Multiplying this amount by the number of practitioners forecasted to use the portal (2000), would result in a total yearly savings of 1.3 million CHF.

- **Increase quality of education, fundraising and project coordination**

Quality increases cannot be empirically assessed unless they are examined in carefully structured studies. Nevertheless, the impact of knowledge on quality of work is an issue addressed by the fields of knowledge economics. The portal is producing knowledge, either by a larger base of practitioners' experiences which can be used by other practitioners or by the editing function Mentor is performing when providing the users with documents and information relevant to their work. Sharing via the portal on one hand, education on the other hand.

Applying the concept of the learning curve, first introduced by Kenneth Arrow in the article "The Economic Implications of Learning by Doing" in 1962 to the sharing of information via the portal one could argue that the portal moves the individual practitioner along the learning curve, giving him the opportunity to learn from other practitioner's experiences. Mathematically, the learning curve is expressed as

$$C = aQ^b$$

with C as the input cost of the Q^{th} unit of output produced. If this relationship holds exactly, a is the cost of the first unit produced. The value of b is negative since increases in cumulative total output reduce cost. If the absolute value of b is large, cost falls more rapidly with increases in cumulative total output than it would if the absolute value of b were small. To estimate the learning curve from historical data on cost and cumulative output one could use regression techniques. (Mansfield 1999). There will be very likely an attenuating effect of a decreasing marginal utility of sharing knowledge.

- **Increase of awareness and stimulate debate about drug misuse prevention**

There is no information about the relevance for online prevention information for a change in the behaviour of any population group. There have been however studies on the prevention effects of information provision. This has been proven ineffective in more studies as we stated above. Prevention approaches relying exclusively or primarily on the information dissemination model do not prevent from drug use.

As for the effectiveness of online-information in health-related questions: The effectiveness of health-related websites for the behaviour of young people has been assessed by Rideout et al. in a survey among 15-24 year-olds, as described above. (Rideout et al. 2001). Many young people who have looked up health information online say they have had conversations with friends, family members and health providers about the information they found. Among those who have sought health information online, seven out of ten (69%) say they have had a conversation with a friend about what they found. Women are more likely than men to have such conversations (73% versus 63%). Among 15-17 year-olds who

have sought health information online, half (53%) say they have had a conversation with a parent or other adult about something they saw online.

Rideout et al. researched as well if the online health seekers also took action after the information retrieval. Among the online health information seekers nearly four (39%; 26% of all respondents) say they have changed their personal behaviour because of health information they got online. Some young people who use the internet to look up information on health issues say they have visited a doctor or other health provider because of something they saw online. One out of seven online information seekers (14%) say they have done so. Young women are more likely to do so than young men.

- **Increase of fundraising**

There is no literature about the impact of an improved information and networking system on the funds that prevention programmes may acquire. The Portal does provide information on projects already underway and on the success factors of a good prevention intervention. Sponsors could use this information to assess a prevention programme before they assign any funds to it. The Portal thus provides tools for evaluation that should lead to increased funds for good programmes, but that might lead to decreased funding for programmes of doubtful effectiveness. It is not possible within this study to assess the impact on the global level of funding for prevention programmes.

- **Increase of number of prevention programmes worldwide**

This paragraph is closely linked to the one on the 'interested public'. If people are thinking about setting up a prevention programme, the threshold may be lowered if good information about the theory and practice of such a project is available and if contact details of other prevention workers are provided. Again, an analysis of the change in the number of prevention programmes does not lie within the scope of this study. We do remark that the number could rise as a result of improved information and clear guidelines for setting up a programme, but the number may also decrease because ineffective programmes are put to a stop.

- **Increase of networking potential and effectiveness of prevention programmes worldwide**

The quantification of the networking effect (establishing contacts between practitioners and projects which have an impact on the productivity of the projects, e.g. through learning) is difficult. Metcalfe's Law⁹ can serve as an indicator for the networking capacity. Other than being an actual natural law it is a description of exponential improvement potential in ICT. "Metcalfe's Law" states that the usefulness or utility of a network equals the square of the number of users. (Gilder 1993). The term "usefulness" is not specified any further. Taking this networking potential into account the average practitioner has – compared to the base-case of having no specific portal available – a theoretical chance of contacting a far larger number of other practitioners working on similar issues and increasing through the networking the impact of his work. Another effect could be – given the large number of prevention projects worldwide – the avoidance of redundancies in prevention –related research.

5.3 The role of the Prevention Intervention Network (PIN) for the impacts of the portal

As stated previously, 80% of the prevention practitioners work in Western countries. The remaining 20% form a group that is hard to reach. The Mentor Foundation is preparing a Prevention Intervention Network as a complement to its Portal. In the Network, prevention workers are to have direct electronic contact. They can thus learn to know each other and exchange experiences. Here we will discuss the possible role of the internet for such global contacts and the impact that the PIN might have on the effectiveness of the Mentor Portal.

5.3.1 Technology in the developing countries

Some of the most and clearly demonstrated applications for ICT in development are in the improvement of health care. Health workers in developing countries are accessing relevant training through ICT-enabled delivery mechanisms (e.g. 'teach and test' self-assessment modules). Centralised data repositories connected to ICT networks enable healthcare professionals to keep abreast of the rapidly

⁹ Robert Metcalfe founded 3Com Corporation and designed the Ethernet protocol for computer networks.

evolving stock of medical knowledge. One example is HealthNet, a system of local telecommunication sites used to provide low cost access to healthcare information in developing countries through a link to basic email. Users connect to the network through local telephone nodes to access services such as physician collaborations, medical databases, consultation and referral scheduling, epidemic alerts, email and shared research and reporting databases. HealthNet is provided by a non-profit organisation, SatelLife with assistance from local and international donors. HealthNet is used by 19500 health care workers in more than 150 countries worldwide. One of the major challenges HealthNet is facing is that implementations especially in Africa have not always delivered the hoped-for level of success due to a number of factors, including: a lack of reliable and affordable telecommunications and power infrastructure; the failure and high cost of local Internet Service providers; user dissatisfaction with low band-width and delayed response (Accenture, Markle Foundation, UNDP 2001). These experiences provide an important argument for the “human interface” established through the Prevention and Information Network.

5.3.2 The PIN and the portal

A key factor for the benefits of the portal is the marketing of the portal and the accessibility in countries with a low internet penetration. The PIN may help practitioners around the world learn about each other’s work, good and disappointing experiences, but also about the information that can be found on Mentor’s Prevention Portal. Thus, the portal and the PIN supports each other’s effectiveness, at the same time lowering overall costs since the same basic infrastructure can be used for both the portal and the PIN.

The portal at this moment does not explicitly address geographic and cultural diversity in prevention practice apart from the range of project descriptions that add to the diversity. The PIN can be of added value in this respect. It directly links prevention workers from different countries, with different sets of values and experiences. This diversity will increase when the portal is available in more languages, because it is likely that the number of project descriptions from non-western countries will increase when they can be added in, for example, French or Spanish. This will lower the threshold for people from these language areas.

5.4 Conclusion

Qualitative and quantitative analysis of the Mentor portal as set against the existing information shows that the portal may be effective and cost-effective, especially when it is fully marketed and translated into a number of languages. The Prevention Intervention Network could support and enhance the effectiveness of the portal. In the next chapter, we will analyse what the minimum and maximum borders of this cost-effectiveness are.

6 Range of possible benefits

6.1 The robustness of the data

One of the most important activity for practitioners is - according to the market survey of Mentor foundation - information research. Based on our earlier calculations for a potential increase in productivity we will show in the following paragraph how the monetary result change in different scenarios. The starting point is the actual moment with a very low assumption of 1100 reached practitioners who actually perform internet research via the portal. This assumption is a reasonable one since the – not yet marketed portal – shows a number of entries for projects of 325 in its first 5 months of existence (as of Sept. 18th 2002). In its first year, the number of entries could be expected to grow linearly to a number of 780 practitioners who enter their project into the database. However, not only people who enter their project into the database are reached. Also people who recover information from the website may benefit from this, as was shown in the previous chapters. We assume that the 780 practitioners who enter their project in this starting period form 70% of the population reached, with a total of a little over 1,100 practitioners reached.

We distinguish three different scenarios, a low growth (10 % annually) in practitioners, a medium development and a high growth. The “business as usual” scenario results in a number of reached practitioners of 2000 by the year 2005. The mid growth scenario bases on the assumption that the starting marketing efforts undertaken by mentor during the next months – so e.g. at the World Forum in Montreal in September with an attendance of 2000-3000 people will result in a steady increase of awareness of the portal in the community. The marketing efforts are supported by portal registration with all important search engines.

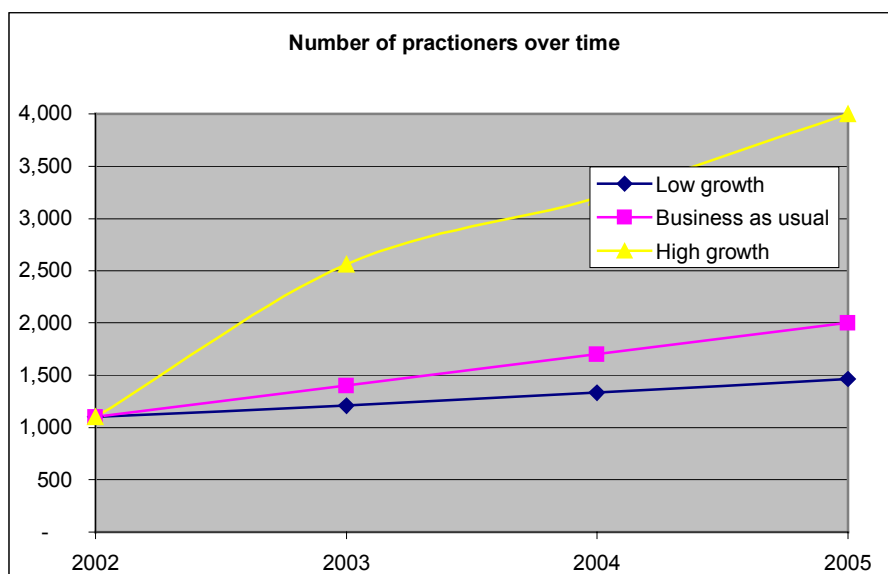


Figure 6-1

Increased productivity in research				
Benefits over time	2002	2003	2004	2005
Low growth scenario				
Number of practitioners	1,100	1,210	1,331	1,464
Yearly benefit	CHF 721,875	CHF 794,062	CHF 873,460	CHF 960,811
Net present value	CHF 2,952,739			
Business as usual scenario				
Number of practitioners	1,100	1,400	1,700	2,000
Yearly benefit	CHF 721,875	CHF 918,750	CHF 1,115,625	CHF 1,312,500
Net present value	CHF 4,068,750			
High growth scenario				
Number of practitioners	1,100	2,560	3,200	4,000
Yearly benefit	CHF 721,875	CHF 1,680,000	CHF 2,100,000	CHF 2,625,000
Net present value	CHF 7,126,875			
Discount factor	5%			

Table 6-1

Not surprisingly, the costs have outweighed the benefits in the first year, for the simple reason that a large investment had to be made in the start-up phase, whereas benefits only start to result once the portal is in function. To recapture the costs and the benefits:

Year	2002	2003	2004	2005
<i>Budget</i>	CHF1,487,000 ¹⁰	CHF1,108,000 ¹¹	CHF 1,168,000	CHF 1,223,100 ¹²
<i>Scenario</i>				
Low growth	CHF 721,875	CHF794,062	CHF873,469	CHF 960,815
Business as usual	CHF 721,875	CHF 918,750	CHF 1,115,625	CHF 1,312,500
High growth	CHF 721,875	CHF 1,680,00	CHF 2,100,000	CHF 2,625,000

Table 6-2

Taking the above assumptions as a basis, the benefits of the portal will not surpass the costs if the growth in the number of people reached is low, and only by 2005 if the growth is steady. If the growth of the number of people reached is high, then the benefits clearly outweigh the costs. A negative result is not surprising in the first two years of the portal, given the large investments needed in technical development and marketing. If the low growth scenario were to become reality, then the costs will remain higher than the benefits on the short term. In the business as usual, the benefits approximate the costs very closely by 2004 and a small 'profit' can be seen as of 2005. The high growth scenario will very soon start to show its value, with the benefits almost doubling the costs by 2004.

Apart from these benefits in monetary terms, the societal and long-term benefits of improved prevention are not to be forgotten. As explained in the introductory chapter of this report and in chapter three, many benefits of prevention are hard to be monetised. Furthermore, a scope of 2005 is very short. Many benefits of prevention accrue over the years of appear after a number of years. Caulkins et al. (1999) note in that respect: "It is important to realize, however, that both a permanent drop in initiation and a 'mere' delay are associated with a reduction in lifetime cocaine consumption (p.xxiii)." Such effects could not be taken into account in our calculations.

These results do give a good indication what could happen if the assumed scenarios occur. The calculation provides both a decision-making tool, but will be

¹⁰ Pre-launch expenses + budget for first half of 2002

¹¹ Budget for H1 2003 + H2 2003

¹² Budget for first half of 2005 multiplied by two, as was done in previous years.

even stronger as part of an evaluation of the portal in the coming years. It will provide a tool to assess the (growth of the) effectiveness over the years.

6.2 Conclusion

This chapter studied the likelihood of the Mentor portal being cost-effective. Using three scenarios, of which the 'business-as-usual' scenario is the most likely one, we studied the yearly benefit and the net present value up to the year 2005. In case of low growth, the portal would not generate any profits, but it would at least cover the costs. In both other scenarios, the benefits would be larger than the costs and the societal benefits certainly would.

7 Conclusion

Taking into account its limitations, this study has shown that an Internet portal for prevention workers is almost surely useful and has a substantial chance of being cost-effective. Starting with scarce information on the effectiveness of information of any kind on the Internet, the case for the effectiveness of prevention interventions is stronger. Several studies have shown that prevention can be effective and cost-effective, but this does not apply to all programmes. Dissemination of such information by the Mentor portal could lead to short-term and clear improvements in the effectiveness of prevention programmes.

We have identified as one of the most important social benefits of the portal the information retrieval function with a high potential of generating increased productivity of practitioners and generating a high impact. In order to support the projections made, Mentor foundation should perform on a regular basis ad hoc surveys via the portal to adjust the evaluations. These surveys could also strengthen the link which was assumed in this study between providing information via the internet about prevention and the actual social benefit compared to alternative uses of funding money.

Annex 1 Background calculations

<i>Increase productivity in research</i>		
Research time spending by practitioners		
<i>Information source</i>	<i>Percentage of time spent</i>	
Internet	2.9	22%
Personal contact	2.8	21%
Books and periodicals	2.6	19%
Local and academic libraries	1.8	13%
Drug organisations	1.7	13%
Drug related information centres	1.6	12%
<i>Total</i>	<i>13.4</i>	<i>100%</i>
Research time saved		
hours a week	40	
% of research time	29%	
% of research through internet	22%	
internet research time in minutes	150.6	
reduction in minutes	20	
reduction in % of internet research time	13.3%	
reduction in % total time	0.8%	
Exchange rate factors		
<i>Currency</i>	<i>Rate in euros</i>	
Deutschmark	€ 0.51	
Swiss frank	€ 0.68	
US dollar	€ 1.04	
Converting currencies		
Deutschmark	120,000.00 DM	50,000.00 DM
Swiss francs	CHF 90,019.17	CHF 37,507.99
Rounded	CHF 90,000.00	CHF 37,500.00
Income per practitioner per year		
	Western	Rest of the world
High boundary	CHF 90,000.00	CHF 20,000.00
Low boundary	CHF 37,500.00	CHF 10,000.00
Cost per practitioner per year		
	Western	Rest of the world
High boundary	CHF 180,000.00	CHF 40,000.00
Low boundary	CHF 75,000.00	CHF 20,000.00
Reduction in global practitioners' cost per year		
Average cost per practitioner	CHF 78,750.00	
reduction in % total time	0.8%	
reduction per practitioner	CHF 656.25	
number of practitioners	2000	
total reduction	CHF 1,312,500.00	
Rounded	CHF 1,300,000.00	

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